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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/742,327	12/18/2003	Ely K. Tsern	60809-0146-US	5522

38426 7590 10/23/2006

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EXAMINER

CHEUNG, MARY DA ZHI WANG

ART UNIT	PAPER NUMBER
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3694

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/742,327

Applicant(s)

TSERN ET AL.

Examiner

Mary Cheung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-54 is/are pending in the application.
- 4a) Of the above claim(s) 32-36 and 45-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 24-31 and 41-44 is/are allowed.
- 6) ☒ Claim(s) 16-23 and 37-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of the Claims

1. This action is in response to the RCE filed on August 22, 2006. Claims 16-54 are pending. Claims 1-15 and 55-61 are canceled. Claims 32-36 and 45-54 are withdrawn from consideration. Claims 16-31 and 37-44 are examined. Claims 16, 24, 37-39 and 41 are amended.

Response to Arguments

2. Applicant's arguments with respect to claims 16-23 and 37-40 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16-23 and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dieffenderfer et al., U. S. Patent 5,910,930 in view of Foss et al., U. S. Patent 5,796,673.

As to claim 16 and 23, Dieffenderfer teaches a memory device having a core that includes memory cells, the memory device comprising (Fig. 1):

- a) A core that includes dynamic random access memory cells (column 3 line 59 – column 4 line 14);

- b) A clock receiver circuit to receive an external clock signal (column 3 line 59 – column 4 line 14 and Fig. 1);
- c) A delay locked loop circuit coupled to the clock receiver circuit, wherein (column 4 lines 45-51 and Fig. 1);
- d) During a first power mode the delay locked loop circuit and the clock receiver circuit are turned on (column 4 lines 45-49 and column 5 lines 4-6);
- e) During a second power mode, the delay locked circuit is turned off (column 5 lines 1-3, 17-21).

Dieffenderfer does not teach the memory device is a single chip dynamic random access memory device. However, Foss teaches this matter (column 4 line 4 – column 6 line 37; specifically, column 6 claim 6 in Foss' teaching). It would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the memory cells, the clock receiver circuit, and the delay locked loop in Dieffenderfer's teaching to be integrated into a single memory chip as taught by Foss for simplification of the device.

As to claim 17, Dieffenderfer teaches the second power mode is a power down mode (column 5 lines 1-3, 17-21).

As to claim 18, Dieffenderfer teaches during the second power mode, the clock receiver circuit is turned off (column 5 lines 1-3, 17-21).

As to claim 19, Dieffenderfer teaches a first control line, coupled to the clock receiver circuit and the delay locked loop circuit, wherein, during the second power

mode, the delay locked loop circuit and the clock receiver circuit are turned off using the first control line (column 4 line 45 – column 5 line 39 and Fig. 1).

As to claims 20-21, Dieffenderfer teaches wherein during a third power mode, the delay locked loop circuit is in a low power configuration and the clock receiver circuit is turned on (column 4 lines 60-61).

As to claims 22 and 40, Dieffenderfer teaches a resynchronization time of the delay locked loop circuit in the low power configuration is less than a resynchronization time of the delay locked loop circuit in the second power mode or the power down mode (column 5 lines 6-8, 19-21).

As to claim 37, Dieffenderfer teaches a method of operation of a memory device having a core of dynamic random access memory cells, a delay locked loop circuit, and a clock receiver circuit coupled to the delay locked loop circuit the method comprising (column 3 line 59 – column 4 line 14 and Fig. 1):

- a) Receiving a command that specifies a power down mode (column 4 lines 52-56);
- b) Turning off a delay locked loop circuit in response to the command that specifies the power down mode (column 5 lines 1-3, 17-21);
- c) Operating the memory device in a standby power mode, wherein the delay locked loop circuit and the clock receiver circuit are turned on in the standby mode (column 4 lines 45-49 and column 5 lines 4-6).

Dieffenderfer does not teach the memory device is a single chip dynamic random access memory device. However, Foss teaches this matter (column 4 line 4 – column 6

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line 37; specifically, column 6 claim 6 in Foss' teaching). It would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the memory cells, the clock receiver circuit, and the delay locked loop in Dieffenderfer's teaching to be integrated into a single memory chip as taught by Foss for simplification of the device.

As to claim 38, Dieffenderfer teaches wherein during the power down mode, the clock receiver circuit is turned off (column 5 lines 1-3, 17-21).

As to claim 39, Dieffenderfer teaches operating the memory device in a nap mode, wherein during the nap mode, the delay locked loop circuit is in a low power configuration and the clock receiver circuit is on (column 4 lines 60-61).

Allowable Subject Matter

5. Claims 24-31 and 41-44 are allowed.

Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Cheung whose telephone number is (571)-272-6705. The examiner can normally be reached on Monday – Thursday from 10:00 AM to 7:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell, can be reached on (571) 272-6712.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax phone number for the organization where this application or proceedings is assigned are as follows:

(571) 273-8300 (Official Communications; including After Final
Communications labeled "BOX AF")
(571) 273-6705 (Draft Communications)

Mary Cheung
October 16, 2006



MARY D. CHEUNG
PRIMARY EXAMINER